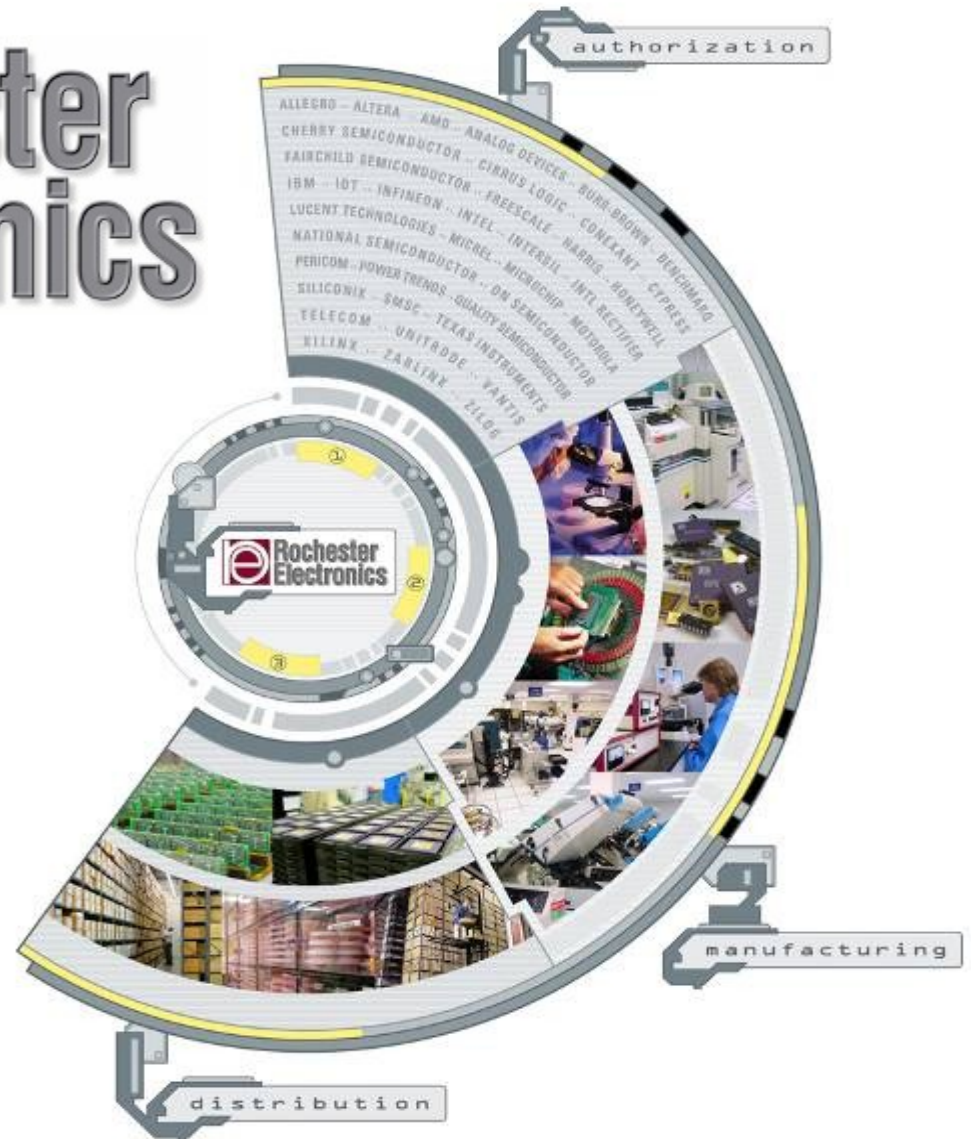




The Impact of
Uncertified
Parts in
Military
Applications.
Manager, Business Development
& Government Relations



WW SEMICONDUCTOR MARKET

	185.384 (81%)								Totals
Segment	Computer	Consumer	Telecom Subscriber	Telecom Infrastructure	Automotive	Industrial General	Industrial HiRel	Military	
Percent of Market	44.00%	17.00%	20.00%	5.46%	7.21%	2.83%	3.24%	0.26%	100.00%
1999 WW Market (\$M)	70.917	20.975	21.361	5.259	8.184	9.845	3.199	1.082	140.822
2000 WW Market (\$M)	104.000	28.000	33.000	8.000	13.000	14.000	4.000	880	204.880
2001 WW Market (\$M)	72.000	19.000	22.000	5.470	8.900	9.000	2.800	830	140.000
2002 WW Market (\$M)	66.603	23.090	23.125	5.781	11.429	7.598	2.400	790	140.816
2003 WW Market (\$M)	78.050	29.050	30.800	6.770	13.370	5.000	2.800	740	166.580
2004 WW Market (\$M)	95.000	37.000	42.000	12.000	14.300	6.100	6.946	701	214.047
2005 WW Market (\$M)	101.215	39.421	44.748	12.785	15.411	6.499	7.400	696	228.175
2006 WW Market (\$M)	108.680	41.990	49.400	13.478	17.798	7.000	8.000	654	247.000
				Future Market predictions:			2007	589	273.794
							2008	553	303.416
							2009	500	320.960

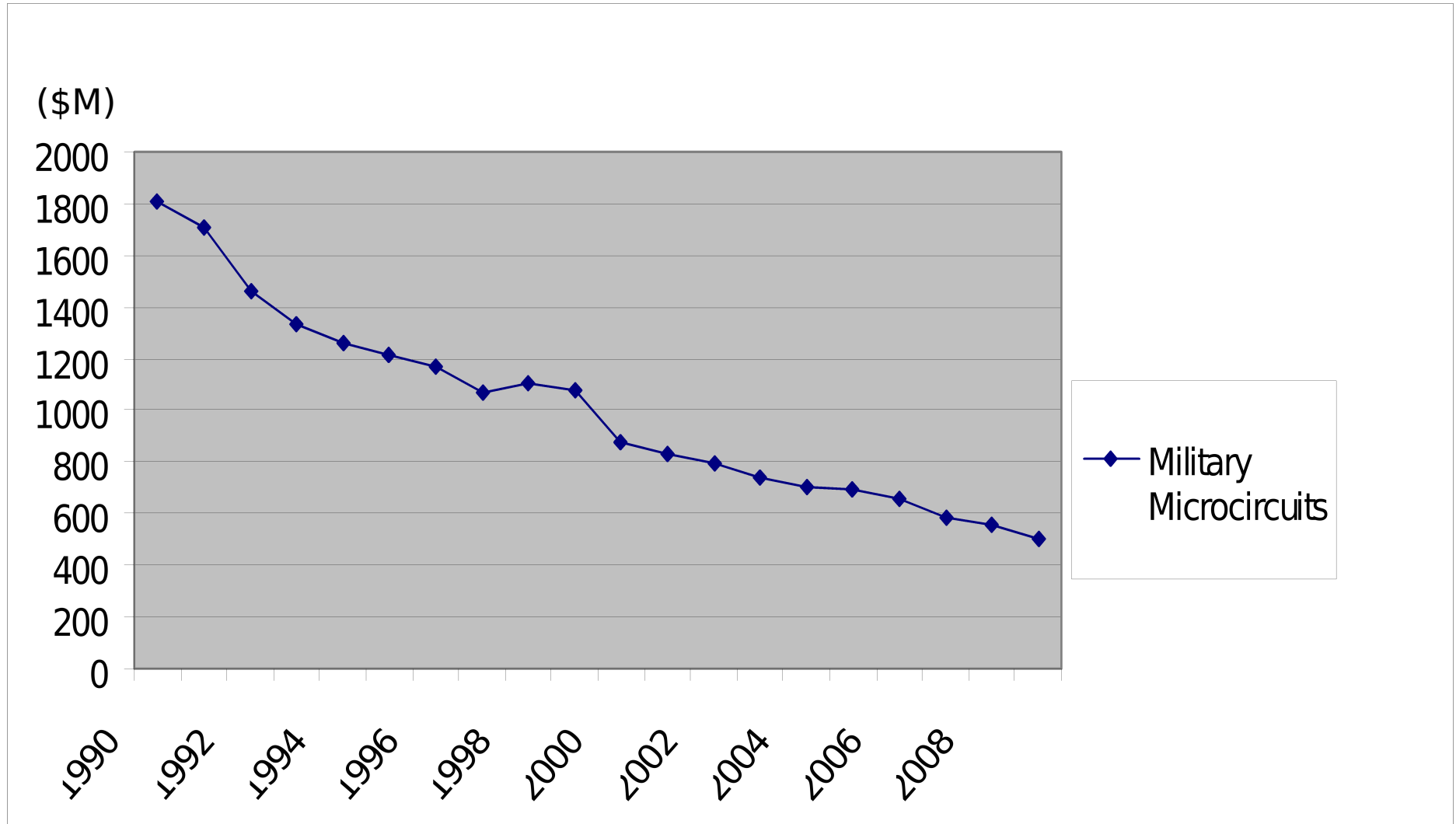
FACTORS IN THE SEMICONDUCTOR MARKET

- 95% FAB UTILIZATION
 - ONLY TOP RUNNERS GET BUILT
- ALLOCATION
 - ONLY TOP CUSTOMERS GET PARTS
- LONG LEAD TIMES
 - ASSEMBLY AND TEST LINES ARE FULL
- OBSOLESCENCE
 - PRIORITY GIVEN TO TOP RUNNERS
 - LOW RUNNERS ARE BEING DROPPED

OBSOLESCENCE - HOW BAD IS IT?

Impact	2000	2001	2002	2003	2004	2005	2006 Projected
PCN and EOL	537,767	422,295	721,686	1,144,467	1,269,059	1,386,634	1,555,606

MILITARY GRADE MICROCIRCUITS



DEFINITIONS OF SUPPLIERS

- The Original Manufacturer
 - Designs, has IP rights, and manufacturers
 - (or consigns manufacturer of) the part. Quality
 - is built in with Warranty.
- Authorized Distributors
 - Have contractual agreement with the
 - Original Manufacturer to distribute the part.
 - Manufacturers Quality, Traceability and Warranty
- Un-Authorized Distributors
 - Have no contractual agreements with
 - the Original Manufacturer. No Manufacturers
 - Quality, No Traceability, No Warranty.

WHO IS AUTHORIZED?

Supplier Overview		All American	Arrow	Avnet	Bell	Digikey	Future	Newark InOne	Nu Horizons	Mouser	Richardson	Rochester Electronics
Supplier	Web Site											
Avago Technologies	www.avagotech.com		X	X		X	X	X				
Allegro	www.allegromicro.com			X				X	X			X
Altera	www.altera.com		X			X	X					X
AMD	www.amd.com		X	X			X					X
Analog Devices	www.analog.com		X	X		X						X
Cirrus Logic	www.cirrus.com			X	X			X	X			X
Conexant	www.conexant.com			X								X
Cypress	www.cypress.com		X	X		X	X					X
Fairchild	www.fairchildsemi.com	X	X	X		X	X	X		X		X
Freescale	www.freescale.com		X	X		X	X	X		X	X	X
IBM Microelectronics	www-03.ibm.com/chips			X								X
IDT	www.idt.com		X	X			X		X			X
Infineon	www.infineon.com		X	X			X				X	X
Intel	www.intel.com		X	X	X	X						X
International Rectifier	www.irf.com		X	X		X	X	X		X	X	X
Intersil	www.intersil.com		X	X		X		X				X
Lattice	www.latticesemi.com		X	X						X		X
Legerity	www.legerity.com		X	X								
Micrel	www.micrel.com		X			X	X		X			X
Microchip	www.microchip.com		X	X		X	X	X		X		X
National	www.national.com		X	X		X	X	X				X
On Semiconductor	www.onsemi.com	X	X	X		X	X	X				X
Pericom	www.pericom.com	X	X			X			X			X
QuickLogic	qweb.quicklogic.com			X			X					
Renesas Technology	www.renesas.com	X	X	X		X			X			
SMSC	www.smssc.com			X					X			X
Texas Instruments	www.ti.com		X	X		X		X		X		X
Xilinx	www.xilinx.com			X		X			X			X
Zarlink	www.zarlink.com			X								X
Zilog	www.zilog.com		X	X		X	X			X		X

WHO IS NOT SUPPLIER AUTHORIZED?

- Independent Distributors
 - No Authorizations from Major Suppliers
- Brokers
 - No Authorizations from Major Suppliers
- Small Disadvantaged Distributor (SDB Certified)
 - Minority owned
 - Veteran owned
 - HUBZone Location
 - Must ask if they have an Authorization from the Major Suppliers.
- Some Data Base providers list Broker parts on their search engines as a valid source of supply.
 - Must verify the validity of the supplier and the parts.

In every case, the supplier of a Counterfeit part was not Supplier Authorized

DEFINITION OF A COUNTERFEIT PART

- **Substitutes or unauthorized copies of a product.**
- **A Product as defined by the manufacturers part number ID, date code and Manufacturers ID in which the materials used or the performance of the product has changed without notice by someone other than the original manufacturer of the product.**
- **A substandard component misrepresented by the supplier.**

Counterfeit Parts

- Counterfeiting accounts for more than 8% of global merchandise trade and is equivalent to lost sales of as much as \$600B.
- Pricing. Counterfeit parts are usually 1/2 or less of the street price for genuine goods. The ever intense pressure on cost particularly only adds to the attractiveness and use of counterfeit parts.
- Availability. The second a part becomes scarce the ever responsive counterfeiters spring into action, and their time to market is impressively fast.
- License Requirements. The tight ITAR restrictions since 911 have really enhanced the counterfeiters position even though these restrictions appear to be rather easily circumvented by customers. This is an area that needs a better solution than we have today to achieve the results we want.

Counterfeit Parts

- Component-level counterfeiting is not limited to any specific commodity, or to any specific geography (despite the focus on China). Plenty of counterfeiting is done here in the US as well as in the Far East and elsewhere. Below are reports of actual and suspected counterfeiting in

Amplifiers

Batteries

Capacitors (electrolytic, tantalum, ceramic chip)

Comparators

Connectors

DRAMs & DRAM modules

Lead-Free solder

Mil-spec semiconductors

MOSFETs

Optocouplers

NVSRAM modules

PLDs

Power & Power Management devices

Printed Circuit Boards

Resistors

RF ICs

Trimmers (potentiometers)

AN UNSCIENTIFIC SURVEY

	Company A	Company B	Company C	Company D	Company E (CM)	Company F (CM)	Company G (CM)	Averages	2006 Semiconductor Market	2009 Semiconductor Market
Total percent	100	100	100	100	100	100	100		\$ 247,000,000,000	\$ 320,960,100,000
Percent bought from Non- Authorized Suppliers	15.00%	10.00%	8.00%	28.00%	28.00%	28.00%	28.00%	21%	\$ 51,164,285,714	\$ 66,484,592,143
8% Counterfeit Content (1.2% of total Market)									\$ 4,093.142.857	\$ 5,318.767.371
15% Counterfeit Content (2.8% of total Market)									\$ 7,674.642.857	\$ 9,972.688.821

Sources: - Survey of Customers
- Technology Forecasters

What's it all about?

- It's about **Authorization** by the original manufacturer.
- It's about **Certification** by DSCC.
- It's about **Pedigree**, of the part and the die that is in the part.
- It's about **Traceability** back to the original manufacturer.

PARTS FROM UNAUTHORIZED SUPPLIERS

- These parts may be Environmentally unsecured.
 - How are they stored?
 - How have they been stored in the past?
 - What is the pedigree?
 - What is the warranty of the parts?
 - What is the traceability?
 - What is the C of C?
 - » some unauthorized suppliers will ask:
“what name do you want on the C of C?”
- **Parts from unauthorized suppliers do not Decrease Costs and Increase Readiness - They Increase overall costs and decrease overall readiness due to substandard quality.**

U.S.C. TITLE 18 - 2320 § 2320

- **Trafficking in Counterfeit Goods or Services**

- (a) Whoever intentionally traffics or attempts to traffic in goods or services and knowingly uses a counterfeit mark on or in connection with such goods or services shall, if an individual, be fined not more than \$2,000,000 or imprisoned not more than 10 years, or both, and, if a person other than an individual, be fined not more than \$5,000,000. In the case of an offense by a person under this section that occurs after that person is convicted of another offense under this section, the person convicted, if an individual, shall be fined not more than \$5,000,000 or imprisoned not more than 20 years, or both, and if other than an individual, shall be fined not more than \$15,000,000.
- (b) Upon a determination by a preponderance of the evidence that any articles in the possession of a defendant in a prosecution under this section bear counterfeit marks, the United States may obtain an order for the destruction of such articles.
- (c) All defenses, affirmative defenses, and limitations on remedies that would be applicable in an action under the Lanham Act shall be applicable in a prosecution under this section. In a prosecution under this section, the defendant shall have the burden of proof, by a preponderance of the evidence, of any such affirmative defense.

HR 32: Stop Counterfeiting in Manufactured Goods Act

- HR 32 was introduced in the House on January 4, 2005 and was made into public law on March 16, 2006. It amends title 18 of the United States Code by providing criminal penalties for trafficking goods with counterfeit marks.
- The US government is losing millions of dollars in tax revenue and jobs from manufacturing and distributing counterfeit goods. The US Customs and Borders Protection estimate that this costs the federal government approximately \$200 billion annually. In addition, there are ties between the counterfeiting market and terrorist organizations, which derive their funding through selling these parts. Finally, these goods pose a threat to public safety in that they do not meet they often do not meet US standards.
- The bill oversees the following provisions;
 - Subjects counterfeited items to be subject to forfeiture
 - Makes guidelines for how these items will be forfeited
 - Directs the court to order the items to be destroyed
 - Directs the court to fine a person convicted of such an offense to pay restitution to the owner of the mark and any other victim of the offense

Product Authentication Proposal

- CPU re-marking dropped by 97% after releasing a free authentication software tool
 - And only 1% of user base runs this tool
- Encrypted “License Plates” create a method to build a similar authentication tool for any other component
- Hypothesis: Empowering customers to validate components before paying for them will dramatically reduce counterfeit products.
- Intel will implement if customer base wants it.

What we are doing.

- Met with Senator Kennedy's Staffers.
 - Will send letter to Sec of Defense.
- Met with Representative Tierney.
 - Will help set up meeting with House Armed Services Committee.
- Will meet with the House Armed Services Committee Staffers.
- Working to get FAR part 6 changed.
- Working to get the Perry Initiative clarified.

What we are doing. Statutes under Review by Congress

- Berry Amendment
- Appropriations Act Restrictions
- Trade Agreements Act
- Buy American Act
 - Changes to FAR's and DFAR's
- Balance of Payments Program
- Small Business Size Regulations

WHAT MUST BE DONE?

- Buy direct from manufacturers or authorized distributors only.
- Rescind FAR Part 6 and the Competition in Contracts Act in cases where non-authorized suppliers are concerned.
- Government agencies and Contractors must buy certified parts from authorized and certified suppliers.
- Remove requirements for SDB's if they are not authorized.
- Conduct ISO9000 and JEDEC 32 inspections and surveys with all suppliers, including the unauthorized distributors you purchase from.
- If you must buy from **unauthorized sources**, Insure the parts are in Stock, insure the Source, and Verify the parts before you buy.

Quality Systems

- Quality Systems are currently in place within every company and Government.
- These systems will abate substandard parts and Counterfeit Parts.
- Use your systems. Re-Empower your Quality Engineers.